

EXHIBIT F
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**UNITED STATES DISTRICT COURT
 NORTHERN DISTRICT OF CALIFORNIA
 SAN FRANCISCO DIVISION**

HUAWEI TECHNOLOGIES CO., LTD.,
 HUAWEI DEVICE USA, INC., and
 HUAWEI TECHNOLOGIES USA, INC.,

Plaintiffs / Counterclaim-Defendants,
 v.

SAMSUNG ELECTRONICS CO., LTD.,
 SAMSUNG ELECTRONICS AMERICA,
 INC.,

Defendants / Counterclaim-Plaintiffs,

and

SAMSUNG RESEARCH AMERICA,

Defendant,
 v.

HISILICON TECHNOLOGIES CO., LTD.,
 Counterclaim-Defendant.

Case No. 16-cv-02787-WHO

**HUAWEI’S SECOND
 SUPPLEMENTAL RESPONSE TO
 DEFENDANTS’ THIRD SET OF
 INTERROGATORIES
 (NOS. 23 AND 28)**

**HIGHLY CONFIDENTIAL
OUTSIDE ATTORNEYS’
EYES ONLY**

Pursuant to Federal Rules of Civil Procedure 26 and 33, Plaintiffs Huawei Technologies Co., Ltd., Huawei Device USA, Inc., and Huawei Technologies USA, Inc. (collectively, “Huawei”), hereby respond to Defendants’ (“Samsung”) or “Defendants”) Third Set of Interrogatories (the “Interrogatories”). These responses are based upon information presently available to, and located by, Huawei. As discovery proceeds, facts, information, evidence, documents, and things may be discovered, which are not set forth in these responses and which may be responsive to these interrogatories. Huawei’s responses are given without prejudice to Huawei’s right to revise and/or supplement these responses. Accordingly, Huawei’s responses shall not be deemed to constitute admissions or representations that any statement or characterization is complete. Huawei, thus, responds as follows:

GENERAL OBJECTIONS

Huawei incorporates the following General Objections into its response to each of Samsung’s Interrogatories, whether or not one or more General Objections are expressly referred to in a specific response:

1. Huawei objects to each interrogatory to the extent that it imposes obligations, which exceed the permissible scope of discovery under the Federal Rules of Civil Procedure, the Local Rules of this Court, any applicable orders of this Court, or any stipulations of the parties.

2. Huawei objects to each interrogatory to the extent it contains discrete subparts within the meaning of Federal Rules of Civil Procedure 33. Each interrogatory, and all parts and subparts, should count separately towards the total permissible number of interrogatories.

3. Huawei objects to each interrogatory as premature to the extent that it calls for the disclosure of expert testimony and opinions.

4. Huawei objects to each interrogatory to the extent that it is overly broad, unduly burdensome, internally duplicative, unreasonably cumulative of other discovery, vague, or ambiguous so as not to be subject to a reasonable interpretation or response and would require Huawei to speculate and decide to what extent it must search through information and subjectively determine what may, or may not, be responsive.

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1 Subject to and without waiving its objections, Huawei will meet and confer with Samsung to
2 discuss a mutual exchange of source-code level infringement contentions, in response to this
3 interrogatory and a similar interrogatory propounded by Huawei on Samsung.

4 **(3/9/18) FIRST SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 27:**

5 Huawei reiterates its above objections. Huawei states that the parties agreed to discuss
6 updating infringement contentions to include source code level information after completion of
7 depositions. At this time, the parties have not further discussed such an update or reached an
8 agreement on this issue.

9 Subject to and without waiving its objections, Huawei identifies the source code produced
10 by Samsung and Qualcomm as containing information responsive to this interrogatory. In
11 particular, the source code selected for printing from among the source code produced by Samsung
12 and Qualcomm contains information responsive to this interrogatory. Huawei identifies the
13 deposition transcripts of Hyeonsoo Kim, YoungSeok Jung, Byungseung Kim, Ilkwon Yun, Byung
14 Wook Kim, and Seong Joon Kim as containing information responsive to this interrogatory.
15 Huawei will disclose the opinions of its experts regarding infringement in accordance with the
16 schedule for expert discovery in this case.

17 **INTERROGATORY NO. 28:**

18 Explain in detail all factual and legal bases for any contention by You that You have not
19 directly, indirectly, or willfully infringed the asserted claims of the Samsung Patents-In-Suit
20 including, without limitation: (1) an identification of each claim element that You allege is not
21 practiced by each Huawei Accused Product; (ii) an explanation of why each such claim element is
22 not practiced literally or under the doctrine of equivalents; (iii) an identification of each claim You
23 allege is not infringed under 35 U.S.C. § 271(a)-(c) by your actions and, for each such claim, an
24 explanation of why your actions do not constitute infringement; and (iv) an identification of all
25 documents, source code, circumstances, or other information that support your contentions.

26 **RESPONSE TO INTERROGATORY NO. 28:**

27 Huawei incorporates its General Objections. Huawei objects that this interrogatory is
28 overbroad, unduly burdensome, and not proportional to the needs of this case. Huawei objects to

the extent that this interrogatory calls for expert testimony. Huawei objects to the extent that this interrogatory seeks information beyond that required by the Patent Local Rules. Huawei objects to the extent this interrogatory seeks “all” factual and legal bases, rather than the principal factual bases. Huawei objects to the extent that this interrogatory seeks to shift the burden of proof regarding infringement. Huawei objects to the extent this interrogatory calls for information concerning claims that are not part of Samsung’s narrowed set of claims pursuant to the Court’s case management orders.

(3/9/18) FIRST SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 28:

Subject to the foregoing General and Specific Objections, and without waiving them, Huawei responds as follows: Huawei does not infringe any valid asserted claim of the asserted Samsung patents. Huawei will provide its positions concerning non-infringement in its rebuttal to any expert report that Samsung serves that describes Samsung’s basis for asserting infringement of any claim of the Samsung Patents-in-Suit by a Huawei product. Samsung’s infringement contentions fail to meet Samsung’s burden to demonstrate infringement of any asserted patent claim for at least the following reasons. Huawei only addresses the asserted claims Samsung identified in its September 11, 2017 Election of Asserted Claims (Dkt. 173). To the extent Samsung changes these asserted claims, Huawei reserves the right to supplement its response below.

U.S. Patent No. 8,457,588

Samsung’s infringement contentions fail to demonstrate how any accused product satisfies the following limitations in independent claims 1, 6, 7, 8, and 9 of the ’588 patent:

- a method for controlling an active time period during a Discontinuous Reception (DRX) operation in a User Equipment (UE) in a mobile communications system comprising (claim 1);
- starting, in the UE, a first timer to monitor control data via a shared control channel, the control data being associated with user data to be transmitted; and (claim 1);
- starting, in the UE, a second timer, when the control data indicating a new transmission of associated user data is received via the shared control channel while the first timer is running, or (claim 1);

- 1 • restarting, in the UE, the second timer, when the control data indicating a new
2 transmission of associated user data is received via the shared control channel while the
3 second timer is running (claim 1);
- 4 • the method of claim 1, wherein the shared control channel includes a Physical Downlink
5 control channel (PDCCH) (claim 6);
- 6 • an apparatus for controlling an active time period during a Discontinuous Reception
7 (DRX) operation in a User Equipment (UE) in a mobile communication system,
8 comprising (claim 7);
- 9 • a DRX controller for starting, in the UE, a first timer to monitor control data via a shared
10 control channel, the control data being associated with user data to be transmitted, and
11 for starting, in the UE, a second timer, when control data indicating a new transmission
12 of associated user data is received via the shared control channel while the first timer is
13 running, or for restarting, in the UE, the second timer, when the control data indicating a
14 new transmission of associated user data is received via the shared control channel while
15 the second timer is running (claim 7);
- 16 • the apparatus of claim 7, wherein the DRX controller receives a duration for the first
17 timer and a duration for the second timer from a Node B (claim 8); and
- 18 • the apparatus of claim 7, wherein the DRX controller receives starting information from
19 a Node B to determine when to start the first timer (claim 9).

20 Because Samsung has failed to demonstrate how the accused products satisfy the above
21 limitations as required by the asserted claims of the '588 patent, the infringement contentions fail to
22 demonstrate infringement either literally or indirectly. In order to show that the accused Huawei
23 products do not infringe the asserted claims of the '588 patent, Huawei will rely on the 3GPP
24 technical specifications and documents cited in Samsung's infringement contentions, Huawei
25 source code and documentation that it has made available for inspection for the accused products,
26 testimony of Huawei witnesses, third-party Qualcomm produced technical specifications and source
27 code, and its forthcoming expert reports on non-infringement, which Huawei will serve in
28 according with the Court's Case Management Order.

U.S. Patent No. 8,619,726

Samsung’s infringement contentions fail to demonstrate how any accused product satisfies the following limitations in independent claims 11 and 13 of the ’726 patent:

- a receiver that receives a number of HARQ processes of a persistent resource allocation and persistent resource allocation interval information, and receives data according to the persistent resource allocation interval information (claim 11);
- a controller that calculates a HARQ process Identifier (ID) using the number of HARQ processes of the persistent resource allocation, the persistent resource allocation interval information, and time information, and associating a HARQ process with the calculated HARQ process ID (claim 11); and
- the apparatus of claim 11, wherein the time information is determined by a System Frame Number (SFN) and a sub-frame number (claim 13).

Because Samsung has failed to demonstrate how the accused products satisfy the above limitations as required by the asserted claims of the ’726 patent, the infringement contentions fail to demonstrate infringement either literally or indirectly. In order to show that the accused Huawei products do not infringe the asserted claims of the ’726 patent, Huawei will rely on the 3GPP technical specifications and documents cited in Samsung’s preliminary infringement contentions, Huawei source code and documentation that it has made available for inspection for the accused products, testimony of Huawei witnesses, third-party Qualcomm produced technical specifications and source code, and its forthcoming expert reports on non-infringement, which Huawei will serve in according with the Court’s Case Management Order.

U.S. Patent No. 9,288,825

Samsung’s infringement contentions fail to demonstrate how any accused product satisfies the following limitations in independent claims 1 and 4 of the ’825 patent:

- receiving system information indicating a group of identification(ID)s (claim 1);
- selecting an first ID from among the group of the IDs (claim 1);
- transmitting a first uplink signal corresponding to the selected first ID for random access to a Node B (claim 1);

- after the transmitting of the first uplink signal, waiting for a predetermined delay duration without checking a downlink channel (claim 1);
- after the waiting for the predetermined delay duration, checking the downlink channel during a valid period (claim 1);
- determining whether a downlink signal responding to the first uplink signal is received in the valid period, the downlink signal comprising a second ID and an UE-ID and (claim 1);
- transmitting a second uplink signal using the UE-ID, if the downlink signal is received during the valid period and the second ID is equal to the first ID (claim 1);
- wherein the valid period starts when the predetermined delay duration starting from transmission of the first uplink signal has terminated (claim 1);
- a receiver configured to receive system information indicating a group of identification(ID)s (claim 4);
- select an first ID from among the group of the IDs, and (claim 4);
- generate a first uplink signal corresponding to the selected first ID for random access (claim 4);
- after transmitting the first uplink signal, wait for a predetermined delay duration without checking a downlink channel (claim 4);
- after waiting for the predetermined delay duration, check the downlink channel during a valid period, and (claim 4);
- determine whether a downlink signal responding to the first uplink is received in the valid period, the downlink signal comprising a second ID and an UE-ID; and (claim 4);
- transmit the generated first uplink signal to a Node B, and (claim 4);
- transmit a second uplink signal using the UE-ID, if the downlink signal is received during the valid period and the second ID is equal to the first ID (claim 4); and
- wherein the valid period starts when the predetermined delay duration starting from transmission of the first uplink signals has terminated (claim 4).

1 Because Samsung has failed to demonstrate how the accused products satisfy the above
2 limitations as required by the asserted claims of the '825 patent, the infringement contentions fail to
3 demonstrate infringement either literally or indirectly. In order to show that the accused Huawei
4 products do not infringe the asserted claims of the '825 patent, Huawei will rely on the 3GPP
5 technical specifications and documents cited in Samsung's infringement contentions, Huawei
6 source code and documentation that it has made available for inspection for the accused products,
7 testimony of Huawei witnesses, third-party Qualcomm produced technical specifications and source
8 code, and its forthcoming expert reports on non-infringement, which Huawei will serve in
9 according with the Court's Case Management Order.

10 **U.S. Patent No. 8,228,827**

11 Samsung's infringement contentions fail to demonstrate how any accused product satisfies
12 the following limitations in independent claims 12 and 13 of the '827 patent:

- 13 • a controller for controlling the transceiver to transmit a message including a Cell-
14 Network Temporary Identifier (C-RNTI) to the BS, if the C-RNTI exists, upon receipt of
15 a random access response message from the BS and activating a timer for collision
16 detection in a random access procedure (claim 12);
- 17 • determining that a contention for the random access procedure is resolved successfully,
18 when User Equipment (UE)-specific control information addressable by the C-RNTI is
19 received from the BS before expiration of the time; and (claim 12);
- 20 • determining that a contention for the random access procedure is resolved successfully,
21 when User Equipment (UE)-specific control information addressable by the C-RNTI is
22 received from the BS before expiration of the time; and (claim 12);
- 23 • determining that the contention for the random access procedure is not resolved
24 successfully, if the UE-specific control information is not received from the BS before
25 the expiration of the timer (claim 12); and
- 26 • the UE of claim 12, wherein the controller controls the transceiver to transmit a message
27 that does not include the C-RNTI to the BS, if the C-RNTI does not exist, and to
28 determine if the contention for the random access procedure is resolved successfully,

1 when a Contention Resolution (CR) message for the random access procedure is
2 received by the BS (claim 13).

3 Because Samsung has failed to demonstrate how the accused products satisfy the above
4 limitations as required by the asserted claims of the '827 patent, the infringement contentions fail to
5 demonstrate infringement either literally or indirectly. In order to show that the accused Huawei
6 products do not infringe the asserted claims of the '827 patent, Huawei will rely on the 3GPP
7 technical specifications and documents cited in Samsung's infringement contentions, Huawei
8 source code and documentation that it has made available for inspection for the accused products,
9 testimony of Huawei witnesses, third-party Qualcomm produced technical specifications and source
10 code, and its forthcoming expert reports on non-infringement, which Huawei will serve in
11 according with the Court's Case Management Order.

12 **U.S. Patent No. 8,761,130**

13 Samsung's infringement contentions fail to demonstrate how any accused product satisfies
14 the following limitations in claims 9, 12, 13, and 16 of the '130 patent:

- 15 • a mapper for mapping a reference signal to a middle symbol in the slot, mapping the
16 data information to remaining symbols in the slot that are not used to map the reference
17 signal, and mapping the acknowledgement information to first symbols among the
18 remaining symbols in the slot, the first symbols not being used to map reference signals
19 and the first symbols being directly adjacent to the middle symbol (claim 9);
- 20 • a transmitter for transmitting the signal including the mapped data information, the
21 mapped acknowledgement information, and the mapped reference signal (claim 9);
- 22 • wherein some of the data information is mapped to the first symbols which are directly
23 adjacent to the middle symbol (claim 9);
- 24 • wherein CQI information is multiplexed with the data information (claim 9);
- 25 • wherein the slot consists of 7 symbols, the reference signal is mapped to a 4th symbol
26 among the 7 symbols, and the acknowledgement information is mapped only to 3rd and
27 5th symbols among the 7 symbols (claim 12);
- 28 • mapping a reference signal to a middle symbol in the slot (claim 13);

- 1 • mapping the data information to remaining symbols in the slot that are not used to map
- 2 the reference signal (claim 13);
- 3 • mapping the acknowledgement information to first symbols among the remaining
- 4 symbols in the slot, the first symbols not being used to map reference signals and the
- 5 first symbols being directly adjacent to the middle symbol (claim 13);
- 6 • transmitting the signal including the mapped data information, the mapped
- 7 acknowledgement information, and the mapped reference signal (claim 13);
- 8 • wherein some of the data information is mapped to the first symbols which are directly
- 9 adjacent to the middle symbol (claim 13);
- 10 • wherein CQI information is multiplexed with the data information (claim 13); and
- 11 • wherein the slot consists of 7 symbols, the reference signal is mapped to a 4th symbol
- 12 among the 7 symbols, and the acknowledgement information is mapped only to 3rd and
- 13 5th symbols among the 7 symbols (claim 16).

14 Because Samsung has failed to demonstrate how the accused products satisfy the above
15 limitations as required by the asserted claims of the '130 patent, the infringement contentions fail to
16 demonstrate infringement either literally or indirectly. In order to show that that the accused
17 Huawei products do not infringe the asserted claims of the '130 patent, Huawei will rely on the
18 3GPP technical specifications and documents cited in Samsung's infringement contentions, Huawei
19 source code and documentation that it has made available for inspection for the accused products,
20 testimony of Huawei witnesses, third-party Qualcomm produced technical specifications and source
21 code, and its forthcoming expert reports on non-infringement, which Huawei will serve in
22 accordance with the Court's Case Management Order.

23 **U.S. Patent No. 8,315,195**

24 Samsung's infringement contentions fail to demonstrate how any accused product satisfies
25 the following limitations in claims 9, 15, and 31 of the '195 patent:

- 26 • determining a set of control channel candidates based on an IDentifier (ID) of the
- 27 terminal (claim 9);

- wherein each control channel candidate included in the set of control channel candidates consists of one of one, two, four, and eight control channel elements (CCEs) existing in the OFDM symbols (claim 9);
- monitoring at least one control channel candidate belonging to the set of control channel candidates to receive the control information (claim 9);
- wherein the variable of the random number generation function includes transmission time information of a subframe (claim 15);
- a set determiner for determining a set of control channel candidates based on an identifier (ID) of the terminal (parent claim 25);
- wherein each control channel candidate included in the set of control channel candidates consists of one of one, two, four, and eight control channel elements (CCEs) existing in Orthogonal Frequency Division Multiplexing (OFDM) symbols carrying control channels (parent claim 25);
- a reception unit for receiving information associated with a number of the OFDM symbols and receiving the control information included in the OFDM symbols by decoding at least one control channel candidate included in the set of control channel candidates (parent claim 25);
- wherein the set of control channel candidates is determined using a random number generation function that defines the ID of the terminal as a variable (parent claim 30); and
- wherein the variable of the random number generation function utilizes transmission time information of a subframe (claim 31).

Because Samsung has failed to demonstrate how the accused products satisfy the above limitations as required by the asserted claims of the '195 patent, the infringement contentions fail to demonstrate infringement either literally or indirectly. In order to show that that the accused Huawei products do not infringe the asserted claims of the '195 patent, Huawei will rely on the 3GPP technical specifications and documents cited in Samsung's infringement contentions, Huawei source code and documentation that it has made available for inspection for the accused products,

1 testimony of Huawei witnesses, third-party Qualcomm produced technical specifications and source
2 code, and its forthcoming expert reports on non-infringement, which Huawei will serve in
3 accordance with the Court’s Case Management Order.

4 **U.S. Patent No. RE44105**

5 Samsung’s preliminary infringement contentions fail to demonstrate how any accused
6 product satisfies the following limitations in independent claims 28, 29, 30, and 32 of the
7 ’105 patent:

- 8 • modulating data information to generate non-FT pre-coded modulation data symbols;
9 modulating control information to generate non-FT pre-coded modulation control
10 symbols; Fourier Transform (FT) pre-coding the non-FT pre-coded modulation data
11 symbols to generate FT pre-coded symbols; mapping the FT pre-coded symbols to a first
12 set of subcarriers; mapping the non-FT pre-coded modulation control symbols to a
13 second set of subcarriers; performing an inverse Fourier Transform (IFT) operation on at
14 least one of (i) the FT pre-coded symbols based on the first set of subcarriers and (ii) the
15 non-FT pre-coded modulation control symbols based on the second set of subcarriers to
16 generate an output signal; transmitting the output signal (claim 28);
- 17 • the method of claim 28, wherein FT pre-coding comprises performing an M point FT
18 operation, performing the IFT operation comprising performing an N point IFT
19 operation, and N is not less than M (claim 29);
- 20 • the method of claim 28, wherein performing the IFT operation comprises performing the
21 IFT operation on both the FT pre-coded symbols based on the first set of subcarriers and
22 the non-FT pre-coded modulation control symbols based on the second set of subcarriers
23 (claim 30); and
- 24 • the method of claim 30, wherein the control information comprises at least one of a pilot
25 signal, a resource request, a random access, Channel Quality Indicator (CQI) and a
26 feedback for hybrid automatic repeat request (HARQ) (claim 32).

27 Because Samsung has failed to demonstrate how the accused products satisfy the above
28 limitations as required by the asserted claims of the ’105 patent, the infringement contentions fail to

1 demonstrate infringement either literally or indirectly. In order to show that the accused Huawei
2 products do not infringe the asserted claims of the '105 patent, Huawei will rely on the 3GPP
3 technical specifications and documents cited in Samsung's infringement contentions, Huawei
4 source code and documentation that it has made available for inspection for the accused products,
5 testimony of Huawei witnesses, third-party Qualcomm produced technical specifications and source
6 code, and its forthcoming expert reports on non-infringement, which Huawei will serve in
7 according with the Court's Case Management Order.

8 **U.S. Patent No. 8,509,350**

9 Samsung's infringement contentions fail to demonstrate how any accused product satisfies
10 the following limitations in independent claims 1 and 3 of the '350 patent:

- 11 • receiving a cell-specific parameter (P_B) signaled by one or more higher layers from the
12 base station; and determining a cell-specific ratio (p_B/p_A) of a first ratio of traffic data to
13 pilot (T2P) for first OFDM symbols (denoted as p_B) to a second ratio of T2P for second
14 OFDM symbols (denoted as p_A), based on the cell-specific parameter and a number of
15 cell-specific antenna ports configured in the base station (claim 1); and
- 16 • wherein a downlink reference symbol Energy Per Resource Element (EPRE) used by the
17 wireless terminal is constant across a downlink system bandwidth and is constant across
18 all subframes until different Reference Signal (RS) power information is received
19 (claim 3).

20 Because Samsung has failed to demonstrate how the accused products satisfy the above
21 limitations as required by the asserted claims of the '350 patent, the infringement contentions fail to
22 demonstrate infringement either literally or indirectly. In order to show that the accused Huawei
23 products do not infringe the asserted claims of the '350 patent, Huawei will rely on the 3GPP
24 technical specifications and documents cited in Samsung's infringement contentions, Huawei
25 source code and documentation that it has made available for inspection for the accused products,
26 testimony of Huawei witnesses, third-party Qualcomm produced technical specifications and source
27 code, and its forthcoming expert reports on non-infringement, which Huawei will serve in
28 according with the Court's Case Management Order.

U.S. Patent No. 9,113,419

Samsung’s preliminary infringement contentions fail to demonstrate how any accused product satisfies the following limitations in independent claim 1 of the ’419 patent:

- Receiving a signaling parameter from the base station; determining a ratio of a first ratio of traffic data to pilot, T2P, for first OFDM symbols to a second ratio of T2P for second OFDM symbols based on the signaling parameter and a number of cell-specific antenna ports configured in the base station, wherein the ratio of the first ratio to the second ratio for one cell-specific antenna port for the signal parameter 0, 1, 2, or 3 is respectively 1, 4/5, 3/5, or 2/5 (claim 1).

Because Samsung has failed to demonstrate how the accused products satisfy the above limitations as required by the asserted claims of the ’419 patent, the infringement contentions fail to demonstrate infringement either literally or indirectly. In order to show that the accused Huawei products do not infringe the asserted claims of the ’419 patent, Huawei will rely on the 3GPP technical specifications and documents cited in Samsung’s infringement contentions, Huawei source code and documentation that it has made available for inspection for the accused products, testimony of Huawei witnesses, third-party Qualcomm produced technical specifications and source code, and its forthcoming expert reports on non-infringement, which Huawei will serve in according with the Court’s Case Management Order.

(4/17/18) SECOND SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 28:

Huawei provides these second supplemental responses to Interrogatory No. 28 pursuant to the agreement reached during the March 30, 2018 discovery conference and solely as a matter of courtesy to Samsung. As stated clearly at the discovery conference, Huawei is under no obligation to provide these supplemental responses, which are properly the subject of forthcoming expert discovery in the case. Thus, as clearly stated at that time, these responses are not to be used to limit the scope of testimony of Huawei’s experts regarding non-infringement. Nor is it proper for Samsung to later move to strike any portion of Huawei’s expert reports regarding non-infringement on the basis of non-disclosure in these responses. Samsung bears the burden of proving infringement, and at this time Samsung has not provided its infringement expert reports as to the

1 patents discussed herein. Moreover, these supplemental responses address only the Samsung patents
2 and claims that are currently elected following case narrowing procedures to date.

3 **U.S. Patent No. 8,619,726**

4
5 Based on Huawei’s current understanding of Samsung’s infringement theories, Huawei
6 states that at a minimum, the Huawei products that have been accused of infringement do not
7 infringe the asserted claims of the ‘726 patent with respect to the elements discussed below, for at
8 least the reasons discussed.

- 9
 - *a receiver that receives a number of HARQ processes of a persistent resource allocation*
10 *and persistent resource allocation interval information, and receives data according to*
11 *the persistent resource allocation interval information (claim 11);*

12 Samsung’s infringement contentions include a reference to TS 36.331, with SPS-Config
13 field descriptions. Based on Huawei’s current understanding of Samsung’s infringement
14 contentions, Samsung’s contentions do not identify a “receiver.” They further do not identify
15 reception of “a number of HARQ processes.” They reference, for example, “semi-persistent
16 scheduling” but Samsung has not explained whether or how this satisfies the “persistent” claim
17 elements. The LTE standard and the Accused Products do not reference “persistent” resources or
18 receive information or data relating to “persistent” resources. Further, based on Huawei’s current
19 understanding of Samsung’s infringement contentions, the Accused Products do not include
20 transmission resources that are periodically allocated to a particular User Equipment (UE) without
21 separate allocation information. The contentions further do not explain which of the identified
22 fields, if any, satisfy each of the “a number of HARQ processes” or “data according to the persistent
23 resource allocation interval information.” Samsung has therefore failed to demonstrate
24 infringement of this element.

- 25
 - *a controller that calculates a HARQ process Identifier (ID) using the number of HARQ*
26 *processes of the persistent resource allocation, the persistent resource allocation*
27 *interval information, and time information, and associating a HARQ process with the*
28 *calculated HARQ process ID (claim 11); and*

29 Samsung’s infringement contentions include a reference to subsection 5.3 of TS 36.321.
30 Samsung’s contentions do not identify a “controller that calculates.” Based on Huawei’s current

1 understanding of Samsung’s infringement contentions, they appear to show several equations, but
2 they do not explain which, if any, satisfies the “calcuat[ion of] a HARQ process Identifier (ID).”
3 For example, based on this understanding, the Accused Products do not operate in accordance with
4 the equations identified in the specification. Nor do they appear to be calculating a HARQ process
5 index. The infringement contentions also do not explain which variables satisfy each of the
6 “number of HARQ processes of the persistent resource allocation,” “the persistent resource
7 allocation interval information,” or “time information.” For example, based on Huawei’s current
8 understanding of Samsung’s infringement contentions, the Accused Products do not utilize
9 persistent resource allocation interval information expressed in units of frames. They also do not
10 explain which functionality satisfies the “associating a HARQ process with the calculated HARQ
11 process ID.” For example, based on Huawei’s current understanding, there is no “associating” step,
12 particularly associating a HARQ process with a HARQ process ID, in the Accused Products.
13
14 Samsung has therefore failed to demonstrate infringement of this element.
15

- 16 • *the apparatus of claim 11, wherein the time information is determined by a System*
17 *Frame Number (SFN) and a sub-frame number (claim 13).*

18 Samsung’s infringement contentions include a reference to subsection 5.3 of TS 36.321.
19 Based on Huawei’s current understanding of Samsung’s infringement contentions, they appear to
20 show several equations, but they do not explain which, if any, satisfies the determination of “time
21 information . . . by a System Frame Number (SFN) and a sub-frame number.” For example, based
22 on Huawei’s understanding, the Accused Products do not determine time information using the
23 equation outlined in the specification. Samsung has therefore failed to demonstrate infringement of
24 this element.
25

26 Because Samsung has failed to demonstrate how the accused products satisfy the above
27 limitations as required by the asserted claims of the ’726 patent, the infringement contentions fail to
28 demonstrate infringement either directly or indirectly.

1 The accused products also do not infringe the asserted claims of the '726 patent because
2 they are not configured to perform each of the claim limitations. Samsung's infringement
3 contentions simply identify functionality in the 3GPP LTE standard and contend that the accused
4 products implement this functionality. Under Samsung's own theories, Samsung has failed to meet
5 its burden to demonstrate that the accused products are actually configured to perform this
6 functionality.

7 The accused products further do not infringe the asserted claims of the '726 patent under a
8 theory of indirect infringement or the doctrine of equivalents. Samsung's infringement contentions
9 simply advance boilerplate theories not specific to the asserted claims of the '726 patent. Samsung
10 fails to meet the burden of proof for these theories.

11 Huawei does not infringe the asserted claims of the '726 patent because the asserted claims
12 are invalid as anticipated and/or rendered obvious by the prior art references and combinations
13 disclosed in Huawei's invalidity contentions. In addition, the asserted claims of the '726 patent are
14 invalid for failure to satisfy the requirements in 35 USC 101 and 35 USC 112, as explained in
15 Huawei's invalidity contentions.

16 Huawei does not infringe the asserted claims of the '726 patent, because Samsung has failed
17 to show satisfaction of all elements required under the means-plus-function requirements of 35 USC
18 112(6).

19 In order to show that the accused Huawei products do not infringe the asserted claims of the
20 '726 patent, Huawei will rely on at least the 3GPP technical specifications and documents cited in
21 Samsung's infringement contentions, Huawei source code and documentation that it has made
22 available for inspection for the accused products, testimony of Huawei witnesses, third-party
23 Qualcomm produced technical specifications and source code, and its forthcoming expert reports on
24 non-infringement, which Huawei will serve in accordance with the Court's Case Management
25 Order.

U.S. Patent No. 9,288,825

Based on Huawei’s current understanding of Samsung’s infringement theories, Huawei states that at a minimum, the Huawei products that have been accused of infringement do not infringe the asserted claims of the ‘825 patent with respect to the elements discussed below, for at least the reasons discussed.

- *receiving system information indicating a group of identification(ID)s (claim 1)*
- *a receiver configured to receive system information indicating a group of identification(ID)s (claim 4)*

Samsung’s infringement contentions reference subsections 5.1.2 and 6.1.3 of 36.321. Based on Huawei’s current understanding of Samsung’s infringement contentions, Samsung’s infringement contentions do not explain which information constitutes “system information” or how that system information “indicat[es] a group of identification(ID)s.” For example, based on Huawei’s current understanding of Samsung’s infringement contentions the accused products do not receive system information that includes a group of IDs, even if they include indices or some other reference. Samsung’s infringement contentions also fail to identify a “receiver.” Samsung has therefore failed to demonstrate infringement of this element.

- *selecting an first ID from among the group of the IDs (claim 1)*
- *select an first ID from among the group of the IDs, and (claim 4)*

Samsung’s infringement contentions include a reference to subsections 5.1.2 and 5.1.3 of TS 35.321. Based on Huawei’s current understanding of Samsung’s infringement contentions, the subsections reference “Random Access Preambles group A” and “Random Access Preambles group B,” but Samsung does not identify which, if any, of these satisfy the “group of the IDs.” Nor does Samsung identify whether, or how, these preambles constitute a “first ID” or whether a first ID is “among” the group of IDs. Based on Huawei’s current understanding of Samsung’s infringement contentions, the accused products do not select a first ID from the group of IDs claimed.

- *transmitting a first uplink signal corresponding to the selected first ID for random access to a Node B (claim 1)*

- *generate a first uplink signal corresponding to the selected first ID for random access (claim 4); transmit the generated first uplink signal to a Node B, and (claim 4)*

Samsung’s infringement contentions include a reference to subsections 5.1.2 and 5.1.3 of TS 35.321. These subsections reference a Msg3, but Samsung has not identified whether, or how, this message satisfies the “first uplink signal.” Further, they do not identify which element is a “selected first ID” or explain how a first uplink signal is “corresponding” to that selected first ID. For example, based on Huawei’s current understanding of Samsung’s infringement contentions, the Accused Products do not have a first uplink signal that includes any selected first ID. Further, based on this understanding, the Accused Products do not include an uplink signal that is an initial message, with the claimed elements. Samsung has therefore failed to demonstrate infringement of this element.

- *after the transmitting of the first uplink signal, waiting for a predetermined delay duration without checking a downlink channel (claim 1)*
- *after transmitting the first uplink signal, wait for a predetermined delay duration without checking a downlink channel (claim 4)*

Samsung’s infringement contentions include reference to subsection 5.1.4 of TS 36.321. Based on Huawei’s current understanding of Samsung’s infringement contentions, the infringement contentions do not identify whether this subsection relates to a timeframe that is “after the transmitting of the first uplink signal.” Further, they describe a “measurement gap” but do not explain whether this measurement gap satisfies the “predetermined delay duration.” For example, they do not explain what is “determined beforehand” or whether the measurement gap constitutes a “delay duration.” They also do not show whether, during the predetermined delay duration, the UE operates “without checking a downlink channel.” For example, based on Huawei’s current understanding of Samsung’s infringement contentions, the Accused Products do not operate as claimed without checking any downlink channel. Samsung has therefore failed to demonstrate infringement of this element.

- *after the waiting for the predetermined delay duration, checking the downlink channel during a valid period (claim 1)*

- *after waiting for the predetermined delay duration, check the downlink channel during a valid period, and (claim 4)*

Samsung’s infringement contentions include reference to subsection 5.1.4 of TS 36.321. Based on Huawei’s current understanding of Samsung’s infringement contentions, Samsung does not establish whether the functionality of 5.1.4 occurs “after the waiting for the predetermined delay duration.” Further, while Samsung’s infringement contentions reference “*three subframes*” and a “*ResponseWindowSize subframes*,” they do not identify which, if either, constitute a “valid period” as required by the claim, nor do they identify whether the UE engages in “checking the downlink channel” during that period. Samsung has therefore failed to demonstrate infringement of this element.

- *determining whether a downlink signal responding to the first uplink signal is received in the valid period, the downlink signal comprising a second ID and an UE-ID and (claim 1)*
- *determine whether a downlink signal responding to the first uplink is received in the valid period, the downlink signal comprising a second ID and an UE-ID; and (claim 4)*

Samsung’s infringement contentions reference subsection 6.2.2 and 6.2.3 of TS36.321. Based on Huawei’s current understanding of Samsung’s infringement contentions, Samsung’s infringement contentions do not identify which signal, if any, satisfies the “downlink signal” as claimed, or how the downlink signal comprises “a second ID and an UE-ID.” For example, based on Huawei’s understanding, the Accused Products do not include a short ID from the same pool as the temporary IDs. They further do not show a “determining” of whether a downlink signal responding to the first uplink signal is received in the valid period.” Samsung has therefore failed to demonstrate infringement of this element.

- *transmitting a second uplink signal using the UE-ID, if the downlink signal is received during the valid period and the second ID is equal to the first ID (claim 1);*
- *transmit a second uplink signal using the UE-ID, if the downlink signal is received during the valid period and the second ID is equal to the first ID (claim 4); and*

Samsung’s infringement contentions reference subsection 5.1.4 of TS 36.321. Based on Huawei’s current understanding of Samsung’s infringement contentions, Samsung’s infringement

1 contentions do not identify which signal is a “second uplink signal” or explain whether that second
2 uplink signal “us[es] the UE-ID.” Further, they do not identify the condition of “if the downlink
3 signal is received during the valid period and the second ID is equal to the first ID.” Samsung has
4 therefore failed to demonstrate infringement of this element.

- 5 • *wherein the valid period starts when the predetermined delay duration starting from*
6 *transmission of the first uplink signal has terminated (claim 1)*
- 7 • *wherein the valid period starts when the predetermined delay duration starting from*
8 *transmission of the first uplink signals has terminated (claim 4)*

9 Samsung’s infringement contentions reference subsection 6.3.2 of TS 36.331. Based on
10 Huawei’s current understanding of Samsung’s infringement contentions, Samsung’s infringement
11 contentions do not show whether a valid period “starts when the predetermined delay duration
12 starting from the transmission of the first uplink signal has terminated.” Samsung has therefore
13 failed to demonstrate infringement of this element.

14 Because Samsung has failed to demonstrate how the accused products satisfy the above
15 limitations as required by the asserted claims of the ’825 patent, the infringement contentions fail to
16 demonstrate infringement either directly or indirectly.

17 The accused products also do not infringe the asserted apparatus claims of the ’825 patent
18 because they are not configured to perform each of the claim limitations. Samsung’s infringement
19 contentions simply identify functionality in the 3GPP LTE standard and contend that the accused
20 products implement this functionality. Samsung therefore has not shown any of a “signal
21 generator,” a “receiver,” a “downlink signal processor,” or a “transceiver.” Under Samsung’s own
22 theories, Samsung has failed to meet its burden to demonstrate that the accused products are
23 actually configured to perform this functionality.

24 The accused Huawei products also do not infringe asserted method claims because they do
25 not perform each of the method steps recited in the claim. Samsung’s infringement contentions
26 simply identify functionality in the 3GPP LTE standard and contend that the accused products
27 implement this functionality. However, infringement of a method claim requires Samsung to
28

1 demonstrate that each of the claimed steps is actually performed. Under Samsung’s own theories,
2 Samsung has failed to meet its burden.

3 The accused products further do not infringe the asserted claims of the ’825 patent under a
4 theory of indirect infringement or the doctrine of equivalents. Samsung’s infringement contentions
5 simply advance boilerplate theories not specific to the asserted claims of the ’825 patent. Samsung
6 fails to meet the burden of proof for these theories.

7 Finally, Huawei does not infringe the asserted claims of the ’825 patent because the asserted
8 claims are invalid as anticipated and/or rendered obvious by the prior art references and
9 combinations disclosed in Huawei’s invalidity contentions. In addition, the asserted claims of the
10 ’825 patent are invalid for failure to satisfy the requirements in 35 USC 112 and 35 USC 101, as
11 explained in Huawei’s invalidity contentions.

12 In order to show that the accused Huawei products do not infringe the asserted claims of the
13 ’825 patent, Huawei will rely on at least the 3GPP technical specifications and documents cited in
14 Samsung’s infringement contentions, Huawei source code and documentation that it has made
15 available for inspection for the accused products, testimony of Huawei witnesses, third-party
16 Qualcomm produced technical specifications and source code, and its forthcoming expert reports on
17 non-infringement, which Huawei will serve in accordance with the Court’s Case Management
18 Order.

19 **U.S. Patent No. 8,761,130**

20 Samsung’s infringement contentions failed to demonstrate that the accused Huawei products
21 literally infringe claim 12, 13, or 16 of the ’130 patent for at least the following reasons:

- 22 • Samsung’s infringement contentions failed to demonstrate that any of the recited
23 “mapping” steps are performed. The cited portions of the LTE standard relate to writing
24 data and/or control bits to a matrix, not symbols as claimed. In addition, the claims
25 require that certain data be mapped to the same symbol, such as ACK/NACK and user
26 data and CQI and user data and ACK/NACK. Samsung’s infringement contentions point
27 to portions of the standard that separate ACK/NACK from user data and CQI from user
28 data and from ACK/NACK.

- 1 • Samsung’s infringement contentions failed to demonstrate that the recited “*mapping*”
- 2 steps are performed in the order as required by the claims, despite the fact that claim
- 3 language unambiguously indicates a required ordering.
- 4 • Samsung’s infringement contentions failed to demonstrate “*mapping the data*
- 5 *information to remaining symbols in the slot*” and “*mapping the acknowledgement*
- 6 *information to first symbols among the remaining symbols in the slot*” as interpreted by
- 7 Samsung. To avoid institution of Huawei’s *inter partes* review, Samsung advanced
- 8 certain claim construction arguments with respect to the term “*symbol*” before the PTAB,
- 9 which the PTAB adopted. Samsung’s claim construction representations to the Board
- 10 constitutes prosecution estoppel and precludes infringement of these claim elements. *See*
- 11 *Aylus Networks, Inc. v. Apple Inc.*, 856 F.3d 1353 (Fed. Cir. 2017).

12 Samsung’s infringement contentions failed to demonstrate that the accused Huawei products

13 infringe claim 12, 13, or 16 of the ’130 patent under the doctrine of equivalents, as there are no

14 disclosures of any infringement theories under the doctrine of equivalents.

15 **U.S. Patent No. RE44105**

16 Samsung’s infringement contentions fail to demonstrate how any accused product satisfies

17 the following limitations in claims 28, 29, 30, and 32 of the ’105 patent:

- 18 • “*modulating data information to generate non-FT pre-coded modulation data symbols*”
- 19 *(claim 28);*

20 Based on Huawei’s current understanding of Samsung’s infringement contentions, Samsung

21 has not identified the data information that is modulated in the accused products.

- 22 • “*modulating control information to generate non-FT pre-coded modulation control*
- 23 *symbols*” (claim 28);

24 Based on Huawei’s current understanding of Samsung’s infringement contentions, the

25 accused products do not modulate control information as required by this claim limitation. In the

26 accused products, the demodulation reference signal (DRS) and the sounding reference signal

27 (SRS) are not modulated.

1 In addition, Samsung has not identified the control information that is modulated in the
2 accused products.

- 3 • “Fourier Transform (FT) pre-coding the non-FT pre-coded modulation data symbols to
4 generate FT pre-coded symbols” (claim 28);

5 Based on Huawei’s current understanding of Samsung’s infringement contentions, Samsung
6 has not identified the non-FT pre-coded modulation data symbols or the Fourier Transform
7 operation in the accused products.

- 8 • “mapping the FT pre-coded symbols to a first set of subcarriers” (claim 28);

9 Based on Huawei’s current understanding of Samsung’s infringement contentions, Samsung
10 has not identified the FT pre-coded symbols that are mapped to a first set of subcarriers in the
11 accused products.

- 12 • “mapping the non-FT pre-coded modulation control symbols to a second set of subcarriers”
13 (claim 28);

14 Based on Huawei’s current understanding of Samsung’s infringement contentions, the
15 accused products do not map non-FT pre-coded modulation control symbols to a second set of
16 subcarriers as required by this claim limitation. The accused products also do not have modulated
17 control information as required by this claim limitation. In the accused products, the demodulation
18 reference signal (DRS) and the sounding reference signal (SRS) are mapped to all available
19 subcarriers in the resource block. The DRS and the SRS are also not modulated.

20 In addition, Samsung has not identified the non-FT pre-coded modulation control symbols
21 that are mapped to a second set of subcarriers in the accused products.

- 22 • “performing an inverse Fourier Transform (IFT) operation on at least one of (i) the FT pre-
23 coded symbols based on the first set of subcarriers and (ii) the non-FT pre-coded
24 modulation control symbols based on the second set of subcarriers to generate an output
25 signal” (claim 28);

26 Based on Huawei’s current understanding of Samsung’s infringement contentions, the
27 accused products do not map non-FT pre-coded modulation control symbols to a second set of
28 subcarriers as required by this claim limitation. The accused products also do not have modulated

1 control information as required by this claim limitation. In the accused products, the demodulation
2 reference signal (DRS) and the sounding reference signal (SRS) are mapped to all available
3 subcarriers in the resource block. The DRS and the SRS are also not modulated.

4 In addition, Samsung has not identified the FT pre-coded symbols based on the first set of
5 subcarriers or the non-FT pre-coded modulation control symbols based on the second set of
6 subcarriers in the accused products. Samsung also has not identified the IFT operation in the
7 accused products.

- 8 • “transmitting the output signal” (claim 28);

9 Based on Huawei’s current understanding of Samsung’s infringement contentions, Samsung
10 has not identified the output signal that is transmitted in the accused products.

- 11 • “the method of claim 28, wherein FT pre-coding comprises performing an M point FT
12 operation, performing the IFT operation comprising performing an N point IFT operation,
13 and N is not less than M” (claim 29);

14 Based on Huawei’s current understanding of Samsung’s infringement contentions, the
15 accused products do not meet all the claim limitations of independent claim 28. The accused
16 products do not map non-FT pre-coded modulation control symbols to a second set of subcarriers.
17 The accused products also do not have modulated control information. In the accused products, the
18 demodulation reference signal (DRS) and the sounding reference signal (SRS) are mapped to all
19 available subcarriers in the resource block. The DRS and the SRS are also not modulated.

20 In addition, Samsung has not identified the M point FT operation or the N point IFT
21 operation in the accused products.

- 22 • “the method of claim 28, wherein performing the IFT operation comprises performing the
23 IFT operation on both the FT pre-coded symbols based on the first set of subcarriers and
24 the non-FT pre-coded modulation control symbols based on the second set of subcarriers”
25 (claim 30); and

26 Based on Huawei’s current understanding of Samsung’s infringement contentions, the
27 accused products do not meet all the claim limitations of independent claim 28. The accused
28 products do not map non-FT pre-coded modulation control symbols to a second set of subcarriers.

1 The accused products also do not have modulated control information. The accused products further
2 do not perform an IFT operation on both the FT pre-coded symbols and the modulation control
3 symbols at the same time as required by this claim limitation. In the accused products, the
4 demodulation reference signal (DRS) and the sounding reference signal (SRS) are mapped to all
5 available subcarriers in the resource block. The DRS and the SRS are also not modulated.

6 In addition, Samsung has not identified the FT pre-coded symbols based on the first set of
7 subcarriers or the non-FT pre-coded modulation control symbols based on the second set of
8 subcarriers in the accused products. Samsung also has not identified the IFT operation in the
9 accused products.

- 10 • “the method of claim 30, wherein the control information comprises at least one of a pilot
11 signal, a resource request, a random access, Channel Quality Indicator (CQI) and a
12 feedback for hybrid automatic repeat request (HARQ)” (claim 32).

13 Based on Huawei’s current understanding of Samsung’s infringement contentions, the
14 accused products do not meet all the claim limitations of independent claim 28 and dependent claim
15 30. The accused products do not map non-FT pre-coded modulation control symbols to a second set
16 of subcarriers. The accused products also do not have modulated control information. The accused
17 products further do not perform an IFT operation on both the FT pre-coded symbols and the
18 modulation control symbols at the same time. In the accused products, the demodulation reference
19 signal (DRS) and the sounding reference signal (SRS) are mapped to all available subcarriers in the
20 resource block. The DRS and the SRS are also not modulated.

21 In addition, Samsung has not identified the control information in the accused products.

22 Because Samsung has failed to demonstrate how the accused products satisfy the above
23 limitations as required by the asserted claims of the ’105 patent, the infringement contentions fail to
24 demonstrate infringement either directly or indirectly.

25 The accused products also do not infringe the asserted claims of the ’105 patent because
26 they are not configured to perform each of the claim limitations. Samsung’s infringement
27 contentions simply identify functionality in the 3GPP LTE standard and contend that the accused
28 products implement this functionality. Under Samsung’s own theories, Samsung has failed to meet

1 its burden to demonstrate that the accused products are actually configured to perform this
2 functionality.

3 The accused products further do not infringe the asserted claims of the ’105 patent under a
4 theory of indirect infringement or the doctrine of equivalents. Samsung’s infringement contentions
5 simply advance boilerplate theories not specific to the asserted claims of the ’105 patent. Samsung
6 fails to meet the burden of proof for these theories.

7 In addition, the doctrine of intervening rights shields Huawei from liability. The doctrine of
8 intervening rights applies when, as here, substantively modified reissue claims are asserted against
9 products that were in existence before the reissue date and for products for which substantial
10 preparation was made before the reissue date. *See Marine Polymer Technologies, Inc. v. HemCon,*
11 *Inc.*, 672 F.3d 1350, 1361-62 (Fed. Cir. 2012).

12 Huawei is first shielded from liability via the doctrine of absolute intervening rights. The
13 doctrine of absolute intervening rights shields an accused infringer of liability when, as here,
14 substantively modified reissue claims are asserted against products that were in existence *before* the
15 resissue date. 35 U.S.C. § 252, ¶ 1; *Marine Polymer*, 672 F.3d at 1361-62. Therefore, Huawei is
16 shielded from liability for any infringement by products in existence before March 26, 2013.

17 Huawei is next shielded from liability via the doctrine of equitable intervening rights. The
18 doctrine of equitable intervening rights gives the Court discretion to permit the “continued
19 manufacture, use or sale” of otherwise infringing products *after* the reissue date if (1) the products
20 were in existence before the reissue date or (2) substantial preparation regarding the products was
21 made before the reissue date. 35 U.S.C. § 252, ¶ 2; *Marine Polymer*, 672 F.3d at 1362. Therefore,
22 Huawei is shielded from liability for any infringement after March 26, 2013 by: (1) products in
23 existence before March 26, 2013 and (2) products for which substantial preparation was made
24 before March 26, 2013.

25 Finally, Huawei does not infringe the asserted claims of the ’105 patent because the asserted
26 claims are invalid as anticipated and/or rendered obvious by the prior art references and
27 combinations disclosed in Huawei’s invalidity contentions. In addition, the asserted claims of the
28

1 '105 patent are invalid for failure to provide an adequate written description, for lack of
2 enablement, and for indefiniteness. This is also disclosed in Huawei’s invalidity contentions.

3 In order to show that the accused Huawei products do not infringe the asserted claims of the
4 '105 patent, Huawei will rely on at least the 3GPP technical specifications and documents cited in
5 Samsung’s infringement contentions, Huawei source code and documentation that it has made
6 available for inspection for the accused products, testimony of Huawei witnesses, third-party
7 Qualcomm produced technical specifications and source code, and its forthcoming expert reports on
8 non-infringement, which Huawei will serve in accordance with the Court’s Case Management
9 Order.

10 **U.S. Patent No. 8,509,350**

11 Samsung’s infringement contentions fail to demonstrate how any accused product satisfies
12 the following limitations in claims 1 and 3 of the '350 patent:

- 13 • “receiving a cell-specific parameter signaled by one or more higher layers from the base
14 station” (claim 1);

15 Based on Huawei’s current understanding of Samsung’s infringement contentions, Samsung
16 has not identified the cell-specific parameter that is received by the accused products. Samsung also
17 has not identified how the “cell-specific parameter” applies to all UEs in a cell.

- 18 • “determining a cell-specific ratio (p_B/p_A) of a first ratio of traffic data to pilot (T2P) for first
19 OFDM symbols (denoted as p_B) to a second ratio of T2P for second OFDM symbols
20 (denoted as p_A), based on the cell-specific parameter and a number of cell-specific antenna
21 ports configured in the base station” (claim 1); and

22 Based on Huawei’s current understanding of Samsung’s infringement contentions, the
23 accused products do not determine a cell-specific ratio of two traffic-to-pilot ratios as required by
24 this claim limitation. In the accused products, the parameter sent from the base station is converted
25 by the mobile terminal into a second parameter. This second parameter corresponds to eight unique
26 values. These eight unique values are different than ratios of traffic-to-pilot ratios. A cell-specific
27 ratio of two traffic-to-pilot ratios is never determined.

1 In addition, Samsung has not identified the cell-specific ratio that is determined in the
2 accused products or the cell-specific parameter that is received by the accused products. Samsung
3 also has not identified the related first and second ratios in the accused products. Samsung further
4 has not identified how the ratio is “determin[ed]” in the accused products or what is meant by “a
5 number of cell-specific antenna ports configured in the base station” in the accused products.
6 Finally, Samsung has not identified how the “cell-specific ratio” and “a number of cell-specific
7 antenna ports” applies to all UEs in a cell.

- 8 • “wherein a downlink reference symbol Energy Per Resource Element (EPRE) used by the
9 wireless terminal is constant across a downlink system bandwidth and is constant across all
10 subframes until different Reference Signal (RS) power information is received” (claim 3).

11 Based on Huawei’s current understanding of Samsung’s infringement contentions, the
12 accused products do not meet all the claim limitations of independent claim 1. The accused
13 products do not determine a cell-specific ratio of two traffic-to-pilot ratios as required by this claim
14 limitation. In the accused products, the parameter sent from the base station is converted by the
15 mobile terminal into a second parameter. This second parameter corresponds to eight unique values.
16 These eight unique values are different than ratios of traffic-to-pilot ratios. A cell-specific ratio of
17 two traffic-to-pilot ratios is never determined.

18 In addition, Samsung has not identified the downlink reference symbol in the accused
19 products or how it is used in the accused products. Samsung also has not identified how the RS
20 power information is received in the accused products. Samsung further has not identified how the
21 downlink reference symbol changes with regard to downlink system bandwidth and RS power
22 information in the accused products.

23 Because Samsung has failed to demonstrate how the accused products satisfy the above
24 limitations as required by the asserted claims of the ’350 patent, the infringement contentions fail to
25 demonstrate infringement either directly or indirectly.

26 The accused products also do not infringe the asserted claims of the ’350 patent because
27 they do not perform each of the method steps recited in the claims. Samsung’s infringement
28 contentions simply identify functionality in the 3GPP LTE standard and contend that the accused

1 products implement this functionality. However, infringement of a method claim requires Samsung
2 to demonstrate that each of the claimed steps is actually performed. Under Samsung’s own theories,
3 Samsung has failed to meet its burden of proof.

4 The accused products further do not infringe the asserted claims of the ’350 patent under a
5 theory of indirect infringement or the doctrine of equivalents. Samsung’s infringement contentions
6 simply advance boilerplate theories not specific to the asserted claims of the ’350 patent. Samsung
7 fails to meet the burden of proof for these theories.

8 In addition, some of the claimed limitations of the ’350 patent are performed by the
9 network. Samsung has not shown that Huawei controls or directs the network components
10 responsible for performing these limitations such that every alleged limitation should be attributed
11 to Huawei. *See Akamai Techs., Inc. v. Limelight Networks, Inc.*, 797 F.3d 1020, 1022 (Fed. Cir.
12 2015) (en banc). Samsung has not met its burden of proof, and Huawei cannot be held liable for
13 joint or divided infringement.

14 Finally, Huawei does not infringe the asserted claims of the ’350 patent because the asserted
15 claims are invalid as anticipated and/or rendered obvious by the prior art references and
16 combinations disclosed in Huawei’s invalidity contentions. In addition, the asserted claims of the
17 ’350 patent are invalid as claiming unpatentable subject matter, for failure to provide an adequate
18 written description, for lack of enablement, and for indefiniteness. This is also disclosed in
19 Huawei’s invalidity contentions.

20 In order to show that the accused Huawei products do not infringe the asserted claims of the
21 ’350 patent, Huawei will rely on at least the 3GPP technical specifications and documents cited in
22 Samsung’s infringement contentions, Huawei source code and documentation that it has made
23 available for inspection for the accused products, testimony of Huawei witnesses, third-party
24 Qualcomm produced technical specifications and source code, and its forthcoming expert reports on
25 non-infringement, which Huawei will serve in accordance with the Court’s Case Management
26 Order.

U.S. Patent No. 9,113,419

Samsung’s infringement contentions fail to demonstrate how any accused product satisfies the following limitations in claim 1 of the ’419 patent:

- “receiving a signaling parameter from the base station” (claim 1);

Based on Huawei’s current understanding of Samsung’s infringement contentions, Samsung has not identified the signaling parameter that is received in the accused products.

- “determining a ratio of a first ratio of traffic data to pilot, T2P, for first OFDM symbols to a second ratio of T2P for second OFDM symbols based on the signaling parameter and a number of cell-specific antenna ports configured in the base station” (claim 1); and

Based on Huawei’s current understanding of Samsung’s infringement contentions, the accused products do not determine a cell-specific ratio of two traffic-to-pilot ratios as required by this claim limitation. In the accused products, the parameter sent from the base station is converted by the mobile terminal into a second parameter. This second parameter corresponds to eight unique values. These eight unique values are different than ratios of traffic-to-pilot ratios. A ratio of two traffic-to-pilot ratios is never determined.

In addition, Samsung has not identified the ratio that is determined in the accused products or the signaling parameter that is received by the accused products. Samsung also has not identified the related first and second ratios in the accused products. Samsung further has not identified how the ratio is “determin[ed]” in the accused products or what is meant by “a number of cell-specific antenna ports configured in the base station” in the accused products. Finally, Samsung has not identified how “a number of cell-specific antenna ports” applies to all UEs in a cell.

- “wherein the ratio of the first ratio to the second ratio for one cell-specific antenna port for the signal parameter 0, 1, 2, or 3 is respectively 1, 4/5, 3/5, or 2/5” (claim 1).

Based on Huawei’s current understanding of Samsung’s infringement contentions, the accused products do not determine a ratio of two traffic-to-pilot ratios as required by this claim limitation. The accused products also do not have two traffic-to-pilot ratios that can be converted into a ratio of the value 1, 4/5, 3/5, or 2/5 as required by this claim limitation. In the accused products, the parameter sent from the base station is converted by the mobile terminal into a second

1 parameter. This second parameter corresponds to eight unique values. These eight unique values are
2 different than ratios of traffic-to-pilot ratios. A ratio of two traffic-to-pilot ratios is never
3 determined. The eight unique values are not equal to and cannot be converted to the values 1, 4/5,
4 3/5, or 2/5.

5 In addition, Samsung has not identified the ratio in the accused products or the related first
6 and second ratios in the accused products. Samsung also has not identified what is meant by “one
7 cell-specific antenna port” in the accused products. Samsung further has not identified how “one
8 cell-specific antenna port” applies to all UEs in a cell.

9 Because Samsung has failed to demonstrate how the accused products satisfy the above
10 limitations as required by the asserted claim of the ’419 patent, the infringement contentions fail to
11 demonstrate infringement either directly or indirectly.

12 The accused products also do not infringe the asserted claim of the ’419 patent because they
13 do not perform each of the method steps recited in the claim. Samsung’s infringement contentions
14 simply identify functionality in the 3GPP LTE standard and contend that the accused products
15 implement this functionality. However, infringement of a method claim requires Samsung to
16 demonstrate that each of the claimed steps is actually performed. Under Samsung’s own theories,
17 Samsung has failed to meet its burden of proof.

18 The accused products further do not infringe the asserted claim of the ’419 patent under a
19 theory of indirect infringement or the doctrine of equivalents. Samsung’s infringement contentions
20 simply advance boilerplate theories not specific to the asserted claim of the ’419 patent. Samsung
21 fails to meet the burden of proof for these theories.

22 In addition, some of the claimed limitations of the ’419 patent are performed by the
23 network. Samsung has not shown that Huawei controls or directs the network components
24 responsible for performing these limitations such that every alleged limitation should be attributed
25 to Huawei. *See Akamai Techs., Inc. v. Limelight Networks, Inc.*, 797 F.3d 1020, 1022 (Fed. Cir.
26 2015) (en banc). Samsung has not met its burden of proof, and Huawei cannot be held liable for
27 joint or divided infringement.

28

1 Finally, Huawei does not infringe the asserted claim of the ’419 patent because the asserted
2 claims is invalid as anticipated and/or rendered obvious by the prior art references and
3 combinations disclosed in Huawei’s invalidity contentions. In addition, the asserted claim of the
4 ’419 patent is invalid as claiming unpatentable subject matter, for failure to provide an adequate
5 written description, for lack of enablement, and for indefiniteness. This is also disclosed in
6 Huawei’s invalidity contentions.

7 In order to show that the accused Huawei products do not infringe the asserted claim of the
8 ’419 patent, Huawei will rely on at least the 3GPP technical specifications and documents cited in
9 Samsung’s infringement contentions, Huawei source code and documentation that it has made
10 available for inspection for the accused products, testimony of Huawei witnesses, third-party
11 Qualcomm produced technical specifications and source code, and its forthcoming expert reports on
12 non-infringement, which Huawei will serve in accordance with the Court’s Case Management
13 Order.

14 **INTERROGATORY NO. 29:**

15 State in detail all factual and legal bases for each of your defenses to Samsung’s
16 counterclaims and describe how, and the extent to which you contend those defenses affect
17 Samsung’s ability to recover damages, an injunction, or other relief in this action.

18 **RESPONSE TO INTERROGATORY NO. 29:**

19 Huawei incorporates its General Objections. Huawei objects that this interrogatory is
20 overbroad, unduly burdensome, and not proportional to the needs of this case. Huawei objects to
21 the extent that this interrogatory calls for expert testimony. Huawei objects to the extent that this
22 interrogatory seeks information beyond that required by the Patent Local Rules. Huawei objects to
23 the extent this interrogatory seeks “all” factual and legal bases, rather than the principal factual
24 bases. Huawei objects to the extent that this interrogatory seeks to shift the burden of proof
25 regarding Samsung’s counterclaims. Huawei objects that this interrogatory is duplicative of other
26 interrogatories propounded by Samsung, including interrogatory no. 28 Huawei objects to the
27 extent this interrogatory calls for information concerning claims that are not part of Samsung’s
28 narrowed set of claims pursuant to the Court’s case management orders.

(3/9/18) FIRST SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 29:

Huawei reiterates its above objections. Subject to and without waiving its objections, Huawei identifies its responses to other interrogatories propounded by Samsung as responsive to this interrogatory. Huawei identifies the deposition testimony of the witnesses deposed in this case as containing information responsive to this interrogatory. Huawei will disclose the opinions of its experts regarding defenses to Samsung’s counterclaims in accordance with the schedule for expert discovery in this case.

Dated: April 17, 2018

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PROOF OF SERVICE

I am employed in the County of Santa Clara, California. I am over the age of 18 years and not a party to the within action. My business address is 1001 Page Mill Road, Bldg. 1, Palo Alto, California 94304.

On April 17, 2018, I served the foregoing document(s) described as **HUAWEI’S SECOND SUPPLEMENTAL RESPONSES TO DEFENDANTS’ THIRD SET OF INTERROGATORIES** on all interested parties in this action as follows (or as on the attached service list):

☒ (E-MAIL) I caused the document(s) to be delivered by e-mail to each interested party or group as shown below.

Huawei-Samsung-Sidley@sidley.com

QE_Huaweiiv.Samsung@quinnemanuel.com

I declare under penalty of perjury that the foregoing is true and correct.

Executed on April 17, 2018, at Palo Alto, California.

/s/ Nathan A. Greenblatt
Nathan A. Greenblatt